STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

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September 22, 1987

TO: Lowell P. Braxton, Program Administrator

FROM: Frank R. Jensen, Reclamation Soils Specialist Frank Jensen CHT

RE: Reclamation Plan, Topaz Mining Property, Brush Wellman Inc., ACT/023/003, Juab County, Utah

This report is to document my assignment - recommending a possible revegetation procedure for subject mine tuff-covered dump areas. This assignment was made with the understanding that it is too late to move the existing tuff-covered materials to a pit or haul in topsoil as it had been presumed several years ago that the tuff material would be acceptable.

This assignment came as a result of the August 19, 1987 meeting with Lee Davis of Brush Wellman, Incorporated; Bob Bayer and Brian Buck of JBR Consultants Group; and Lowell Braxton, Sue Linner, Lynn Kunzler, myself and others (part-time) of the Division of Oil, Gas and Mining.

On August 24, 1987, I went over the mine area with Lee Davis. As a summary statement, I believe an attempt should be made to see if some desirable vegetation - particularly browse - can be established on the area if a pitted seedbed is prepared and several of the more vigorous browse species are seeded.

Photographs of the mine, revegetation observations, and recommendations follow. (Note: some of the material is taken from the JBR Consultants Group proposed reclamation plan for the mine.)

The mine is in a six- to eight-inch rainfall area with browse species dominating the vegetative cover. Species in the area include: black sagebrush, Mormon-tea, horsebrush, broom snakeweed, shadscale, fourwing saltbush, and rabbitbrush. Grasses include Indian ricegrass and galleta. A mine dump can be seen at the right side of the photograph.

Mine Headquarters - including shop, sleeping quarters, and kitchen.

Roadside Mine Area - This pit is being filled as mining progresses.

Rainbow Mine

Blue Chalk Mine - (Note the tractor with six rippers - an ideal tool for seedbed preparation.)

Test Plot - showing several very vigorous fourwing saltbush plants. Note there is overland flow of precipitation. Future seedings could check this with small pits or contour furrows thus providing more moisture for plant growth. (Lee Davis in photograph)

Test Plot - showing sparse fourwing saltbush plants, however, there is a large amount of run off of the limited precipitation. A pitted surface could check the runoff and provide moisture for additional plant growth.

Test Plot - showing very vigorous fourwing saltbush plants, grass, and yellowsweet clover.

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Contour Furrow - constructed in the fall of 1986. It wasn't seeded, however, it is catching precipitation which would provide for desirable plant growth. The plants are halogeton.

Pitting or contour furrows like this one (with the addition of baffles approximately 25 feet apart) across the dump areas appear to be the best way to trap the limited precipitation for plant growth.

Contour Furrow - constructed in fall of 1986. It was straw mulched and seeded. There is quite a bit of weed growth including halogeton, but there is also some seeded species growing.

Close up of above photo. (Note: a crested wheatgrass plant has made seedhead in less than a year.)

Top portion of one of the dump areas. A "lonely" Indian ricegrass plant has established itself among the halogeton. Some of these dump areas appear to be less harsh than others. Revegetation may or may not be possible; however, it should be tried - with an emphasis on getting browse species established to provide maximum ground cover and add some green vegetative growth to the landscape.

Another dump area - appears to be more harsh than the area above.

Recommendations

1. Select three representative sites - each five to 10 acres in size on the tuff-covered dump areas.

2. Rip the areas thoroughly with the mining tractor as deep as the rippers will go.

3. Using the dozer, thoroughly pit the area or make contour furrows about 25 feet apart - with baffles also about 25 feet apart - to trap the precipitation.

4. Broadcast seed the area with an emphasis on getting browse plants established. The suggested seed mixture is as follows:

SPECIES	LBS/ACRE/PLS
Fourwing saltbush	3
Rabbitbrush (whitestem if available)	3
Greasewood	3
Shadscale	3
Indian ricegrass	3
Crested wheatgrass	5
	20

5. Lightly harrow or drag a light chain to cover the seed 1/4 to 1/2 inch with soil.

6. Broadcast 200 lbs/acre diammonium phosphate fertilizer 18-46-0 over the area.

(Late fall is the best time to do this work.)

In approximately two years the areas could be evaluated to see which species might be best to plant on the rest of the tuff-covered material or if there is no chance for revegetation.

clj
cc: Lee Davis, Brush Wellman
JBR Consultants Group
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